Fig.1

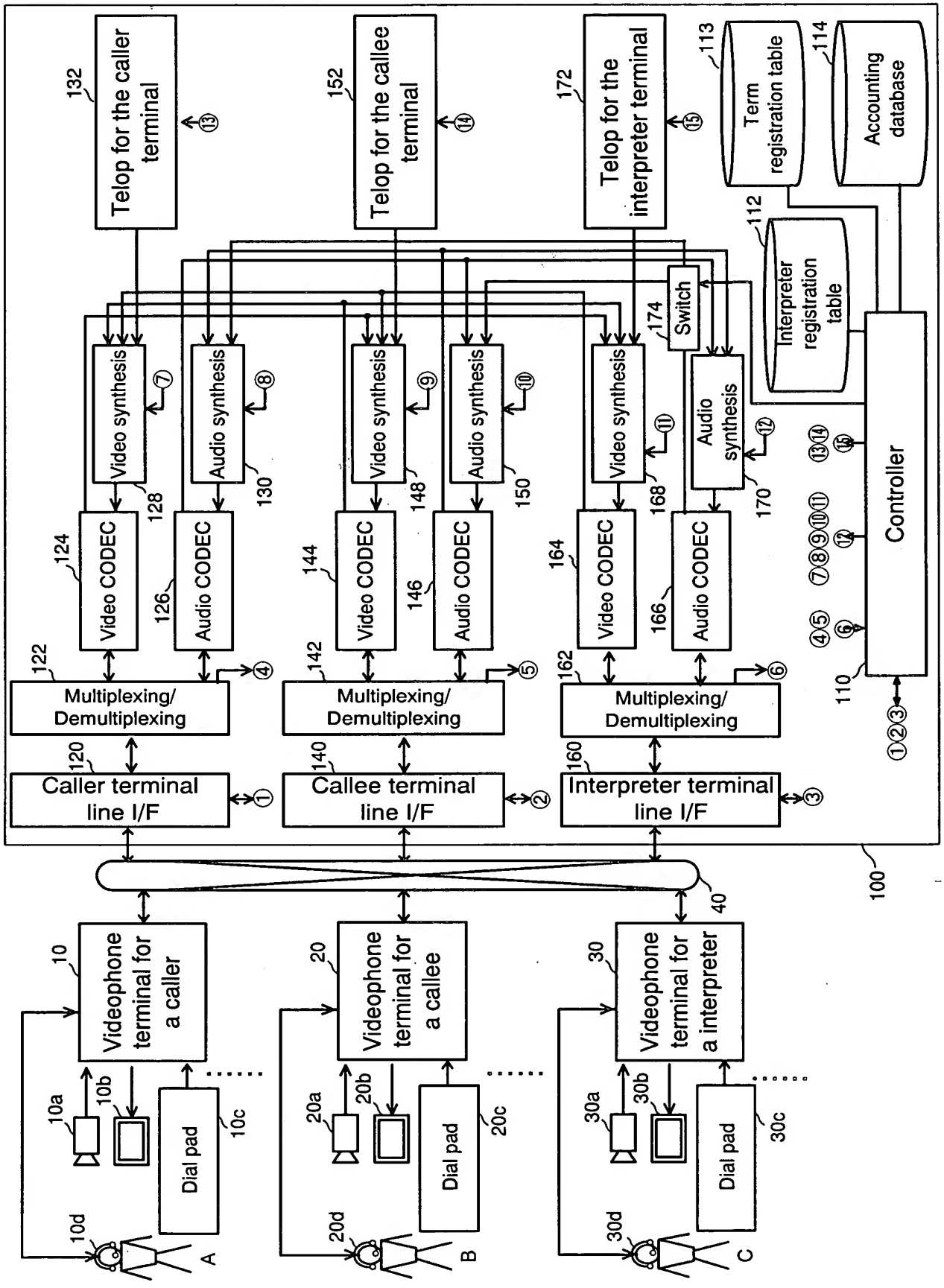

Telop for the caller terminal
Telop for the callee terminal
Telop for the interpreter terminal
Term registration table
Accounting database
Interpreter registration table
Switch
Video synthesis
Audio synthesis
Video CODEC
Audio CODEC
Multiplexing/ Demultiplexing
Caller terminal line I/F
Callee terminal line I/F
Interpreter terminal line I/F
Controller
Videophone terminal for a caller
Videophone terminal for a callee
Videophone terminal for a interpreter
Dial pad
A
B
C

Fig.2(a)
Caller terminal screen

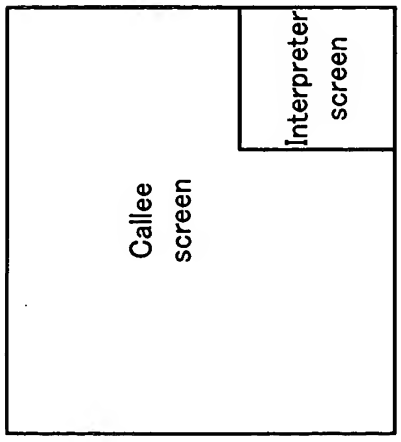


Fig.2(b)
Callee terminal screen

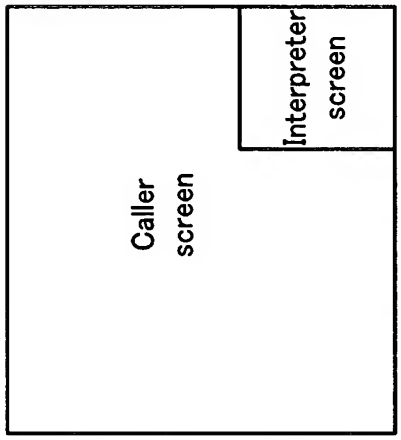
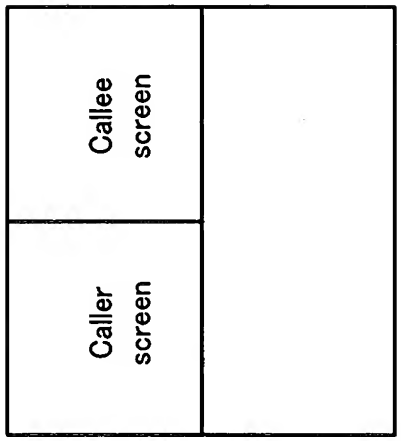


Fig.2(c)
Interpreter terminal screen



Interpreter registration table

Name	Gender	Age	Language							Specialty									Terminal number	Availability flag
			Japanese	English	German	French	Spanish	Russian	Chinese	Politics	Law	Business	Education	Science and technology	Medical care	Language	Sports	Hobby		
XXXX	Male	45	1	1	2					O	O	O							XX-XXXX-XXXX	O
XXXX	Female	25	2	1		1	1	3					O			O			XX-XXXX-XXXX	O
XXXX	Male	33	1	2					1					O			O		XX-XXXX-XXXX	×
.....																				

Fig.3

10/529113

Fig.4

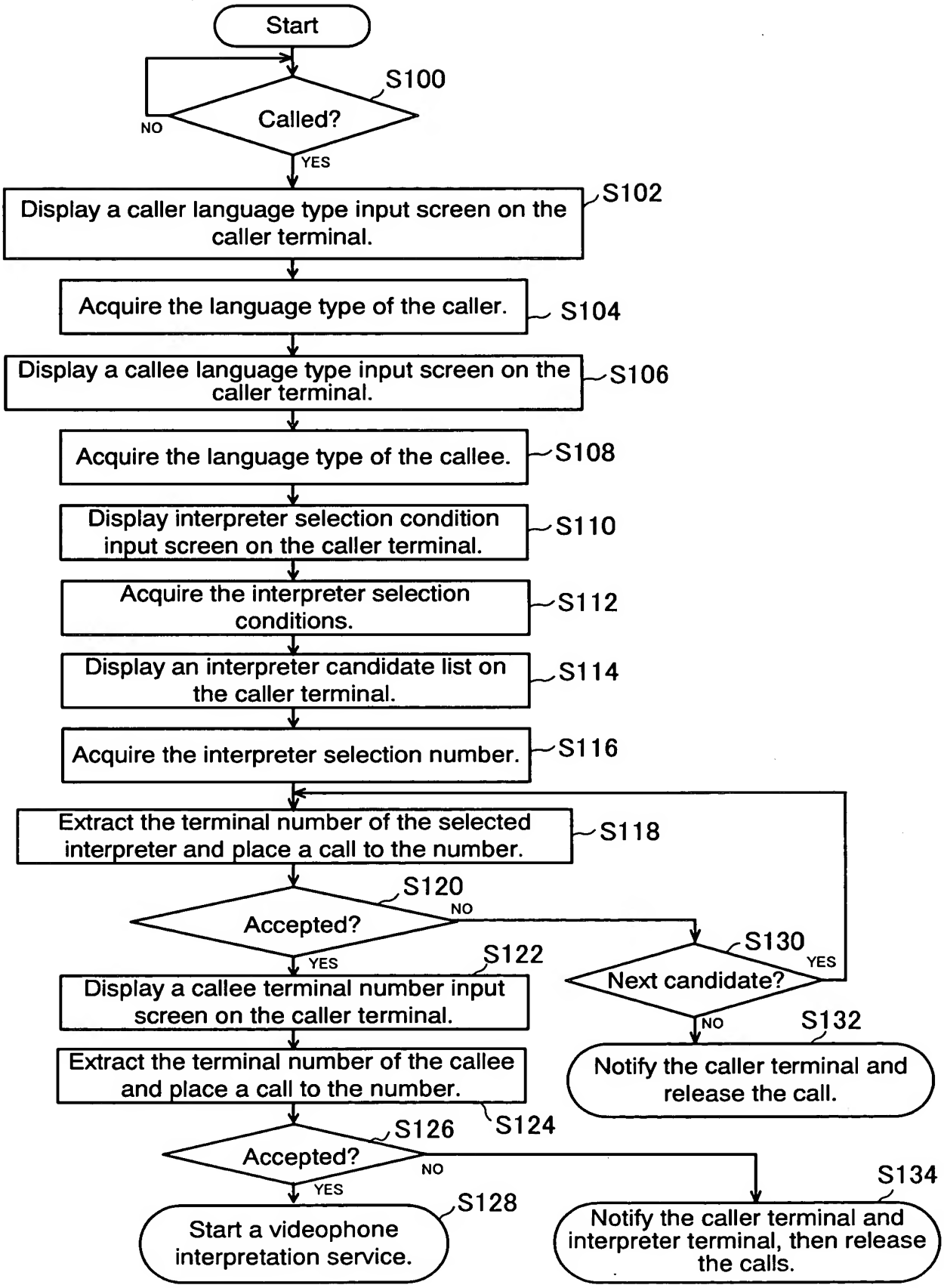

Start
S100
Called?
NO
YES
Display a caller language type input screen on the caller terminal.
S102
Acquire the language type of the caller.
S104
Display a callee language type input screen on the caller terminal.
S106
Acquire the language type of the callee.
S108
Display interpreter selection condition input screen on the caller terminal.
S110
Acquire the interpreter selection conditions.
S112
Display an interpreter candidate list on the caller terminal.
S114
Acquire the interpreter selection number.
S116
Extract the terminal number of the selected interpreter and place a call to the number.
S118
S120
Accepted?
NO
YES
S122
Display a callee terminal number input screen on the caller terminal.
Extract the terminal number of the callee and place a call to the number.
S124
S126
Accepted?
NO
YES
S128
Start a videophone interpretation service.
S130
Next candidate?
YES
NO
S132
Notify the caller terminal and release the call.
S134
Notify the caller terminal and interpreter terminal, then release the calls.

Fig.5(a) Caller language type input screen

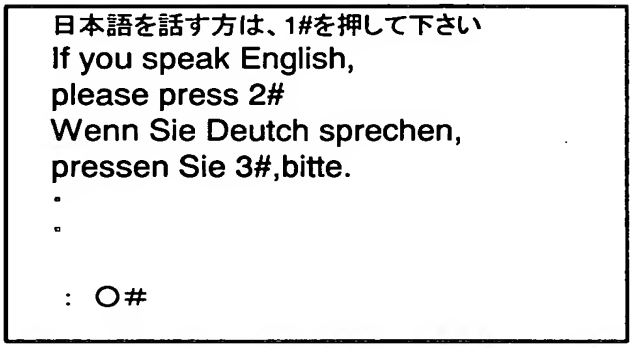


Fig.5(b) Callee language type input screen

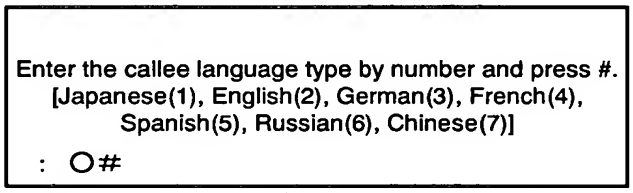


Fig.6(a) Interpreter selection condition input screen

Please enter the number of Interpreter selection condition and press#.
(1) Gender Male(1), Female(2), N/A(0)
: O#
(2) Age Less than 20(1), 20-39(2), 40 or above(3), N/A(0)
: O#
(3) Area Specified(Enter ZIP code), N/A(0)
: OOO-OOOO#
(4) Specialty Politics(1), Law(2), Business(3), Education(4), Science and technology(5) Medical care(6), Language(7), Sports(8), Hobby(9), N/A(0)
: O#
(5) Level Advanced(1), Middle(2), Basic(3), N/A(0)
: O#

Fig.6(b) Interpreter candidate list display screen

Select the number of a desired interpreter from this list

No.	Name	Gender	Age	Specialty	Level		Fee (Yen/hour)
					Caller language	Callee language	
1							
2							
3							
⋮							

: O#

Fig.7

Enter the number of the callee and press #.
: OO—OOO—OOOO#

Fig.8

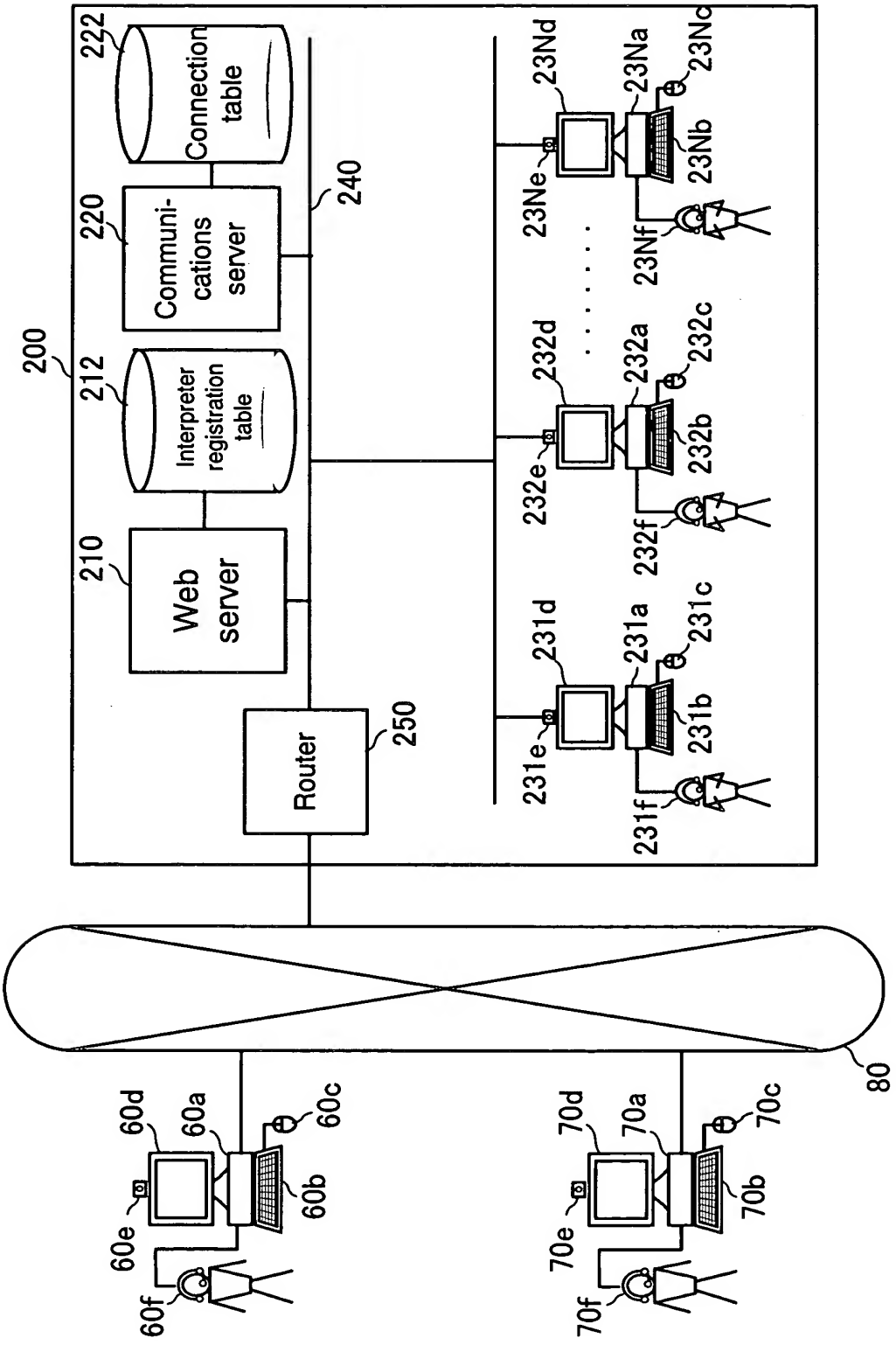

200
222
Connection table
220
Communi-cations server
240
212
Interpreter registration table
210
Web server
250
Router
23Nd
23Na
23Nc
23Ne
23Nb
23Nf
232d
232a
232c
232e
232b
232f
231d
231a
231c
231e
231b
231f
80
60d
60a
60c
60e
60b
60f
70d
70a
70c
70e
70b
70f

Fig.9

Connection table

No.	Caller terminal address	Callee terminal address	Interpreter terminal address
1	XXXX	XXXX	XXXX
2			
3			
. . . . .			

Fig.10

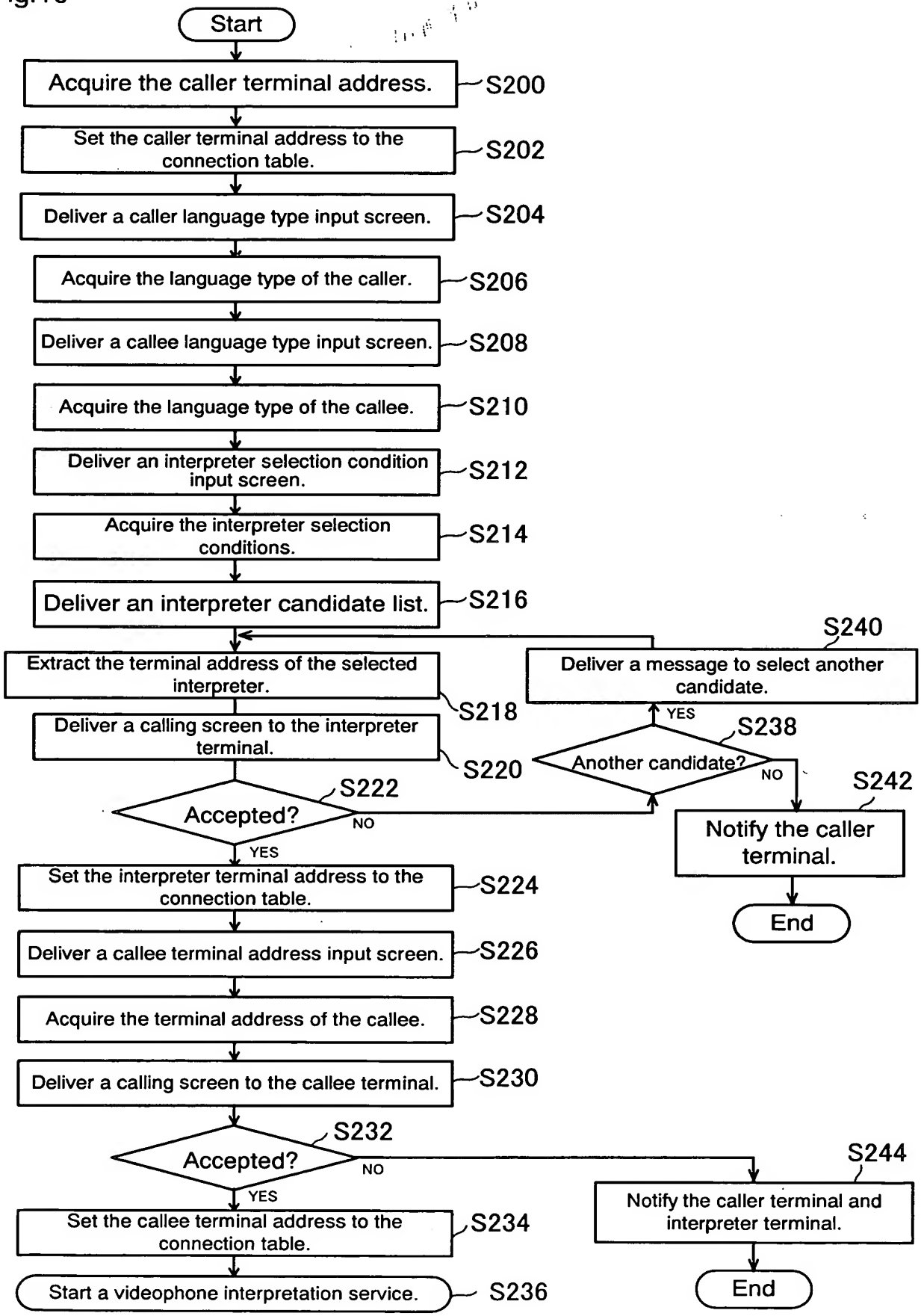

Start
Acquire the caller terminal address.
S200
Set the caller terminal address to the connection table.
S202
Deliver a caller language type input screen.
S204
Acquire the language type of the caller.
S206
Deliver a callee language type input screen.
S208
Acquire the language type of the callee.
S210
Deliver an interpreter selection condition input screen.
S212
Acquire the interpreter selection conditions.
S214
Deliver an interpreter candidate list.
S216
Extract the terminal address of the selected interpreter.
S218
Deliver a calling screen to the interpreter terminal.
S220
Accepted?
S222
NO
YES
Deliver a message to select another candidate.
S240
YES
Another candidate?
S238
NO
Notify the caller terminal.
S242
End
Set the interpreter terminal address to the connection table.
S224
Deliver a callee terminal address input screen.
S226
Acquire the terminal address of the callee.
S228
Deliver a calling screen to the callee terminal.
S230
Accepted?
S232
NO
YES
Notify the caller terminal and interpreter terminal.
S244
End
Set the callee terminal address to the connection table.
S234
Start a videophone interpretation service.
S236

Fig.11

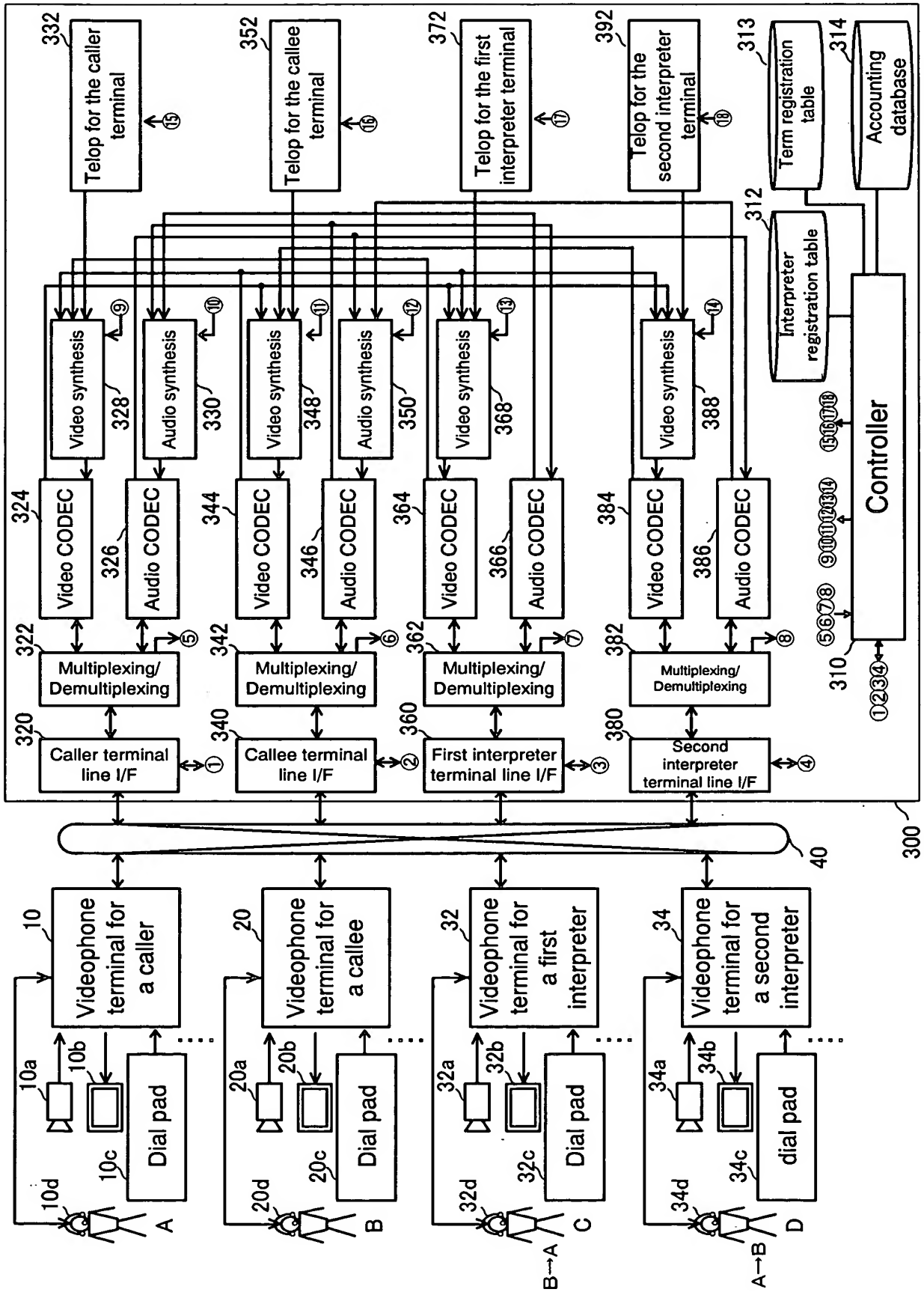

Telop for the caller terminal
Telop for the callee terminal
Telop for the first interpreter terminal
Telop for the second interpreter terminal
Term registration table
Accounting database
Interpreter registration table
Controller
Video synthesis
Audio synthesis
Video CODEC
Audio CODEC
Multiplexing/ Demultiplexing
Caller terminal line I/F
Callee terminal line I/F
First interpreter terminal line I/F
Second interpreter terminal line I/F
Videophone terminal for a caller
Videophone terminal for a callee
Videophone terminal for a first interpreter
Videophone terminal for a second interpreter
Dial pad
dial pad
A
B
C
D
B→A
A→B

Fig.12(a)

Caller terminal screen

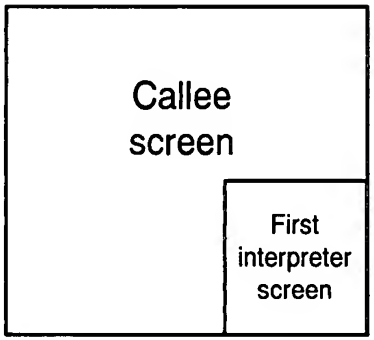


Fig.12(b)

Callee terminal
screen

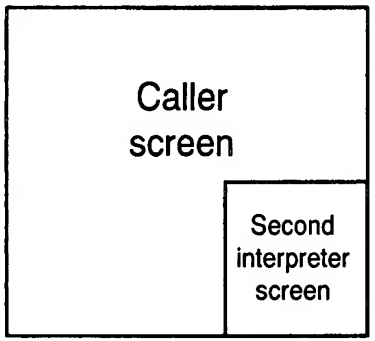


Fig.12(c)

First interpreter
terminal screen

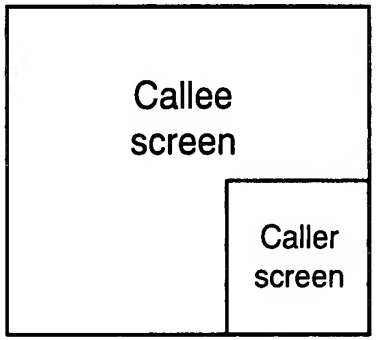
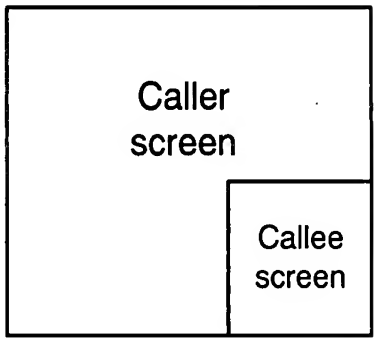


Fig.12 (d)

Second interpreter
terminal screen



10/529113

Interpreter registration table

Name	Gender	Age	Language							Specialty									Terminal number	Availability flag
			Japanese	English	German	French	Spanish	Russian	Chinese	Politics	Law	Business	Education	Science and technology	Medical care	Language	Sports	Hobby		
XXXX	Male	45	1	1	1					○	○	○							XX-XXXX-XXXX	○
			1	1	2															
XXXX	Female	25	2	1		1	1	2					○			○			XX-XXXX-XXXX	○
			3	1		1	2	3												
XXXX	Male	33	1	1					1					○			○		XX-XXXX-XXXX	×
			1	2					1											
. . . . .																				

Note: In language columns, level of listening comprehension is shown in upper row and level of speaking ability in lower row.

Fig.13

10/529113

Fig.14

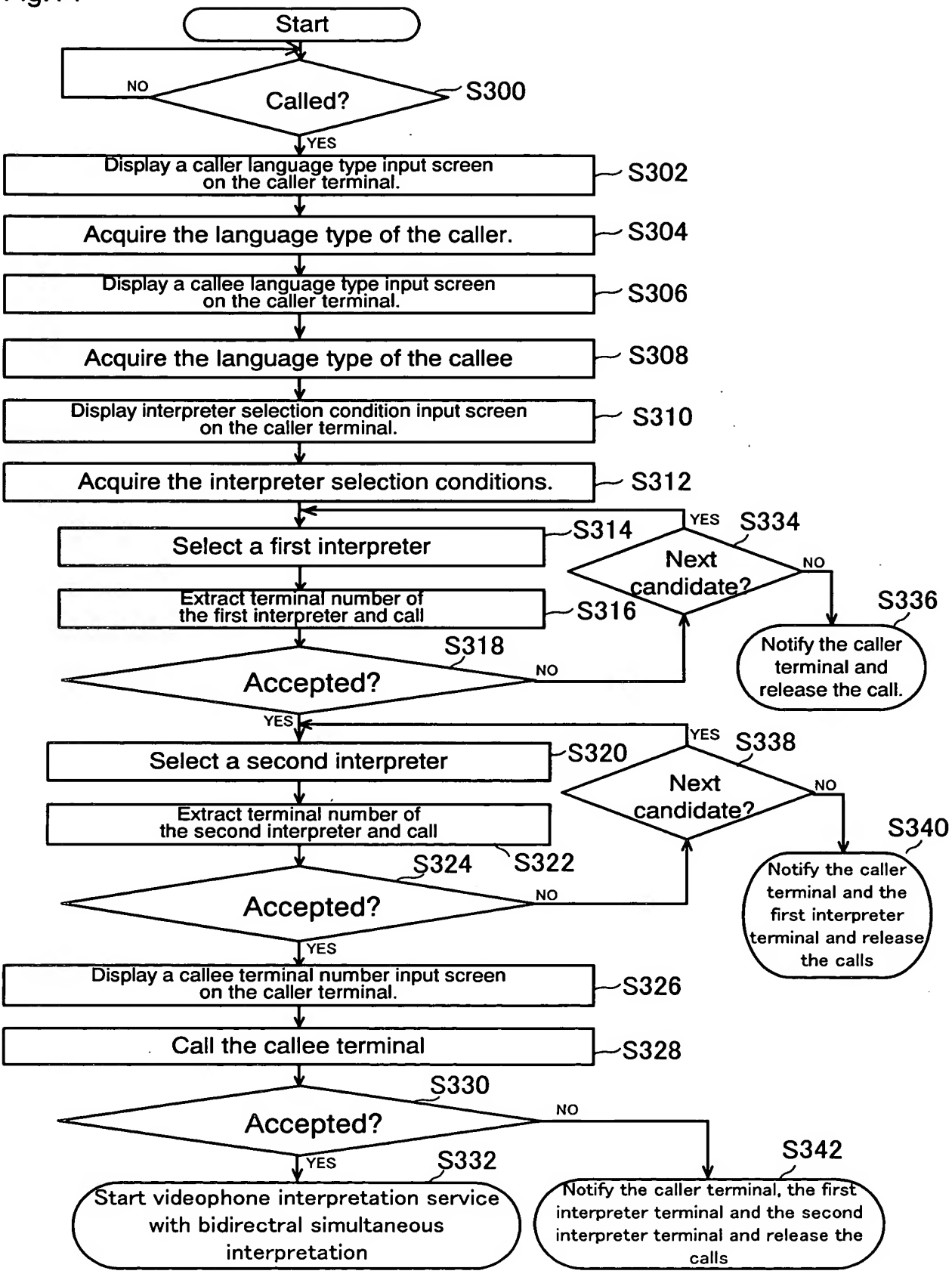

Start
Called?
NO
YES
S300
Display a caller language type input screen on the caller terminal.
S302
Acquire the language type of the caller.
S304
Display a callee language type input screen on the caller terminal.
S306
Acquire the language type of the callee
S308
Display interpreter selection condition input screen on the caller terminal.
S310
Acquire the interpreter selection conditions.
S312
Select a first interpreter
S314
Extract terminal number of the first interpreter and call
S316
Accepted?
S318
NO
YES
Next candidate?
S334
YES
NO
Notify the caller terminal and release the call.
S336
Select a second interpreter
S320
Extract terminal number of the second interpreter and call
S322
Accepted?
S324
NO
YES
Next candidate?
S338
YES
NO
Notify the caller terminal and the first interpreter terminal and release the calls
S340
Display a callee terminal number input screen on the caller terminal.
S326
Call the callee terminal
S328
Accepted?
S330
NO
YES
Start videophone interpretation service with bidirectral simultaneous interpretation
S332
Notify the caller terminal, the first interpreter terminal and the second interpreter terminal and release the calls
S342

Fig. 15

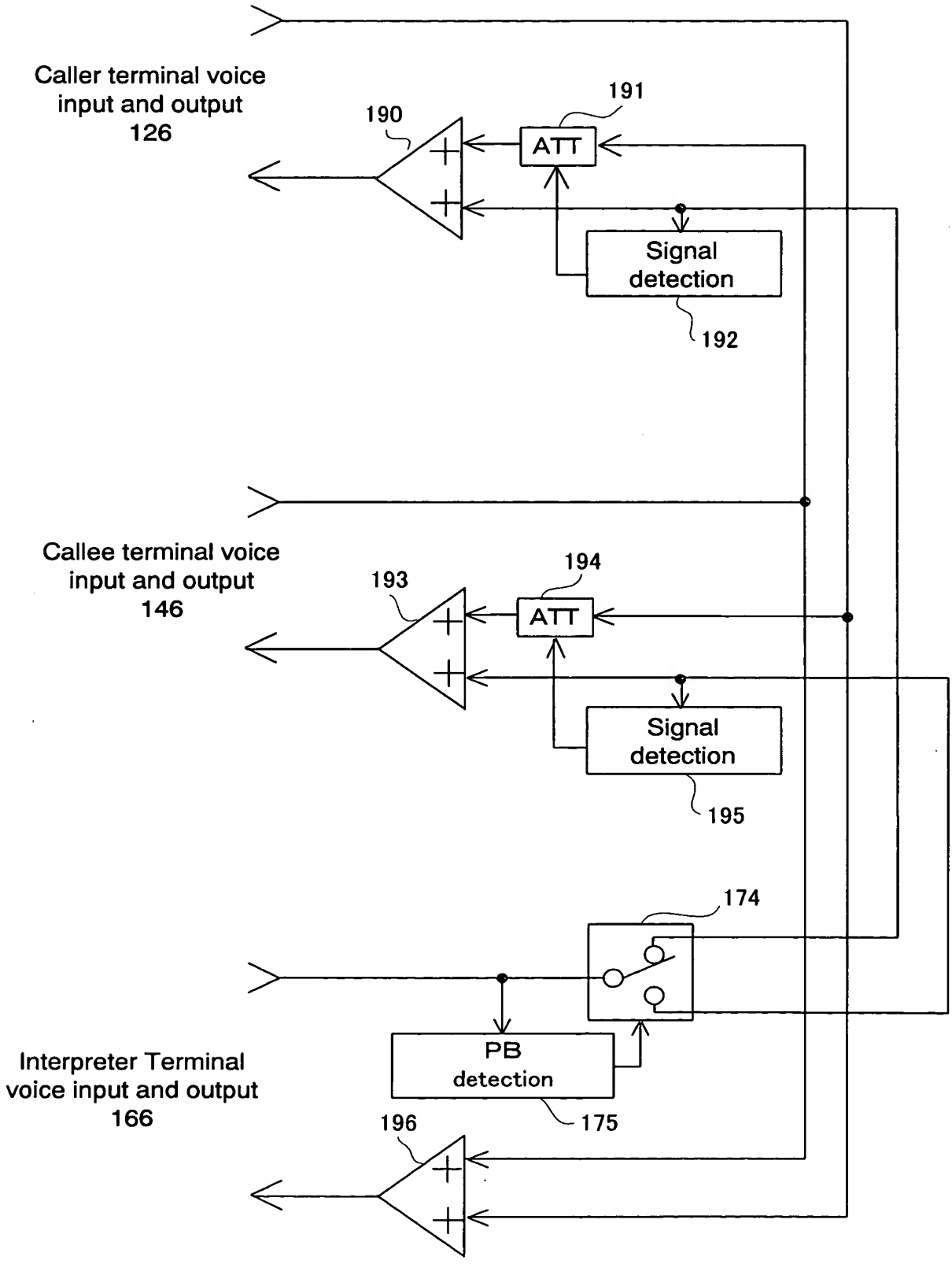

Caller terminal voice input and output 126
190
191
ATT
Signal detection
192
Callee terminal voice input and output 146
193
194
ATT
Signal detection
195
174
PB detection
175
Interpreter Terminal voice input and output 166
196

Fig.16

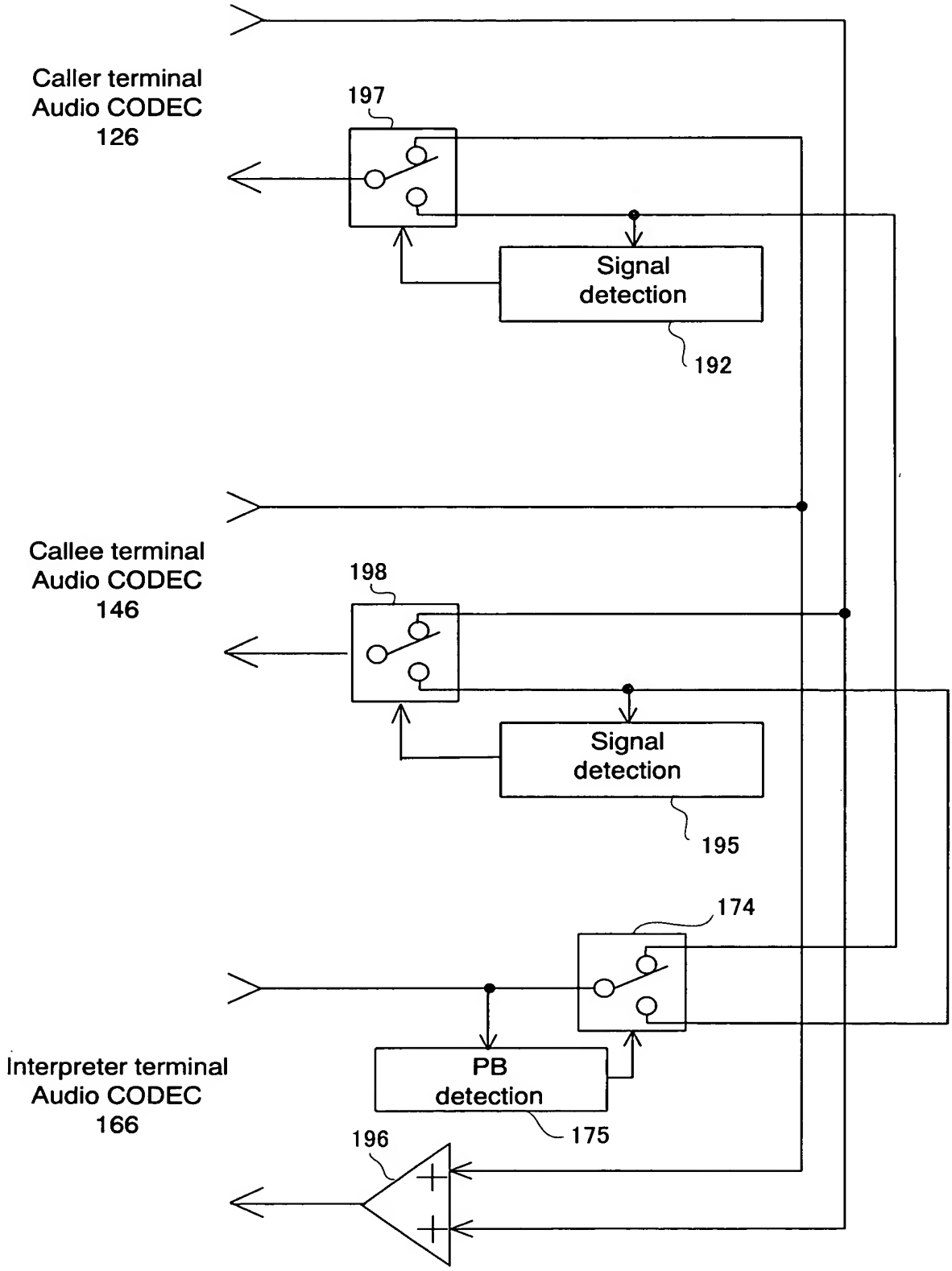

Caller terminal
Audio CODEC
126
197
Signal
detection
192
Callee terminal
Audio CODEC
146
198
Signal
detection
195
174
Interpreter terminal
Audio CODEC
166
PB
detection
175
196

Fig.17

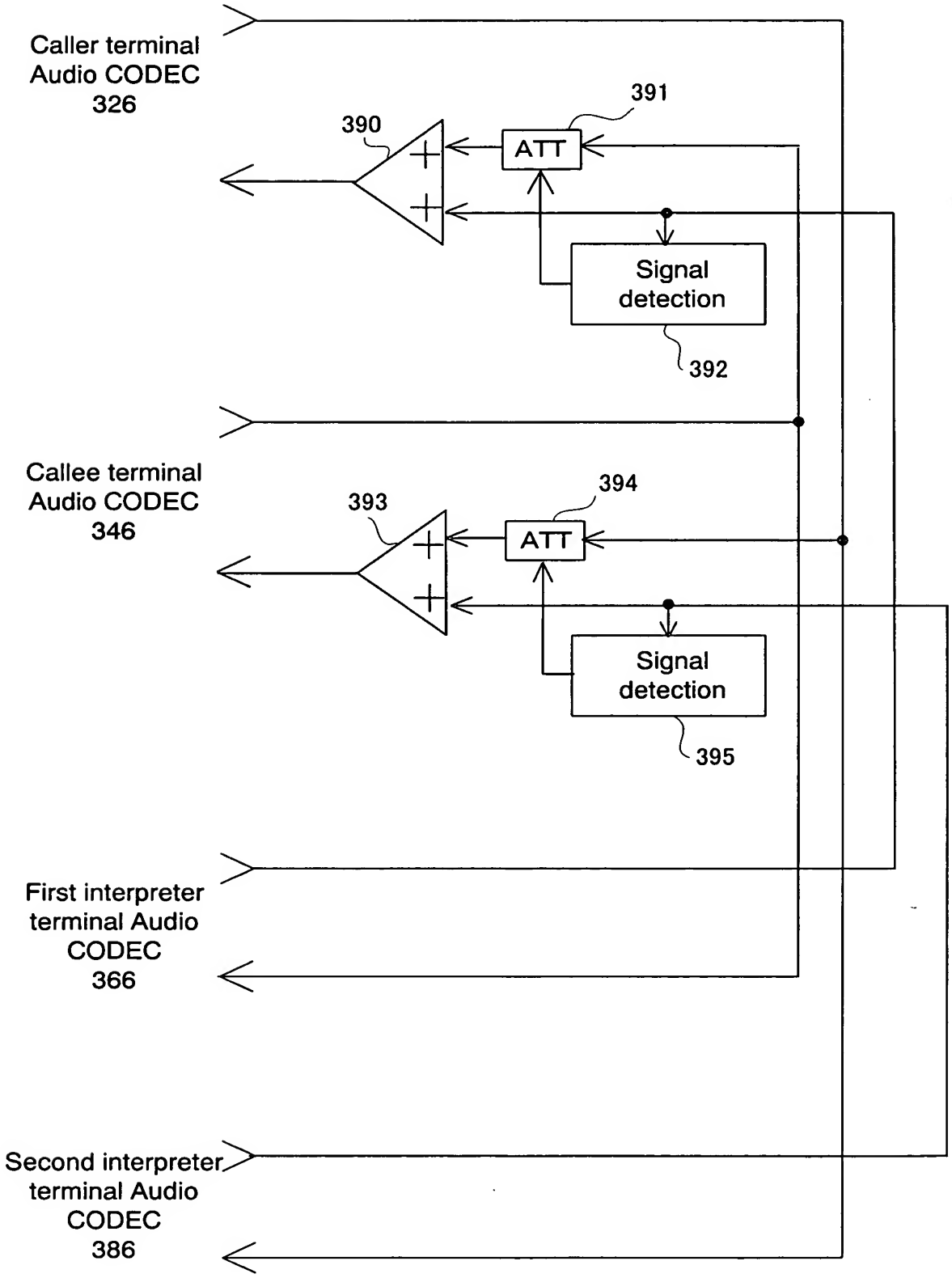

Caller terminal
Audio CODEC
326
390
391
ATT
Signal
detection
392
Callee terminal
Audio CODEC
346
393
394
ATT
Signal
detection
395
First interpreter
terminal Audio
CODEC
366
Second interpreter
terminal Audio
CODEC
386

Fig.18

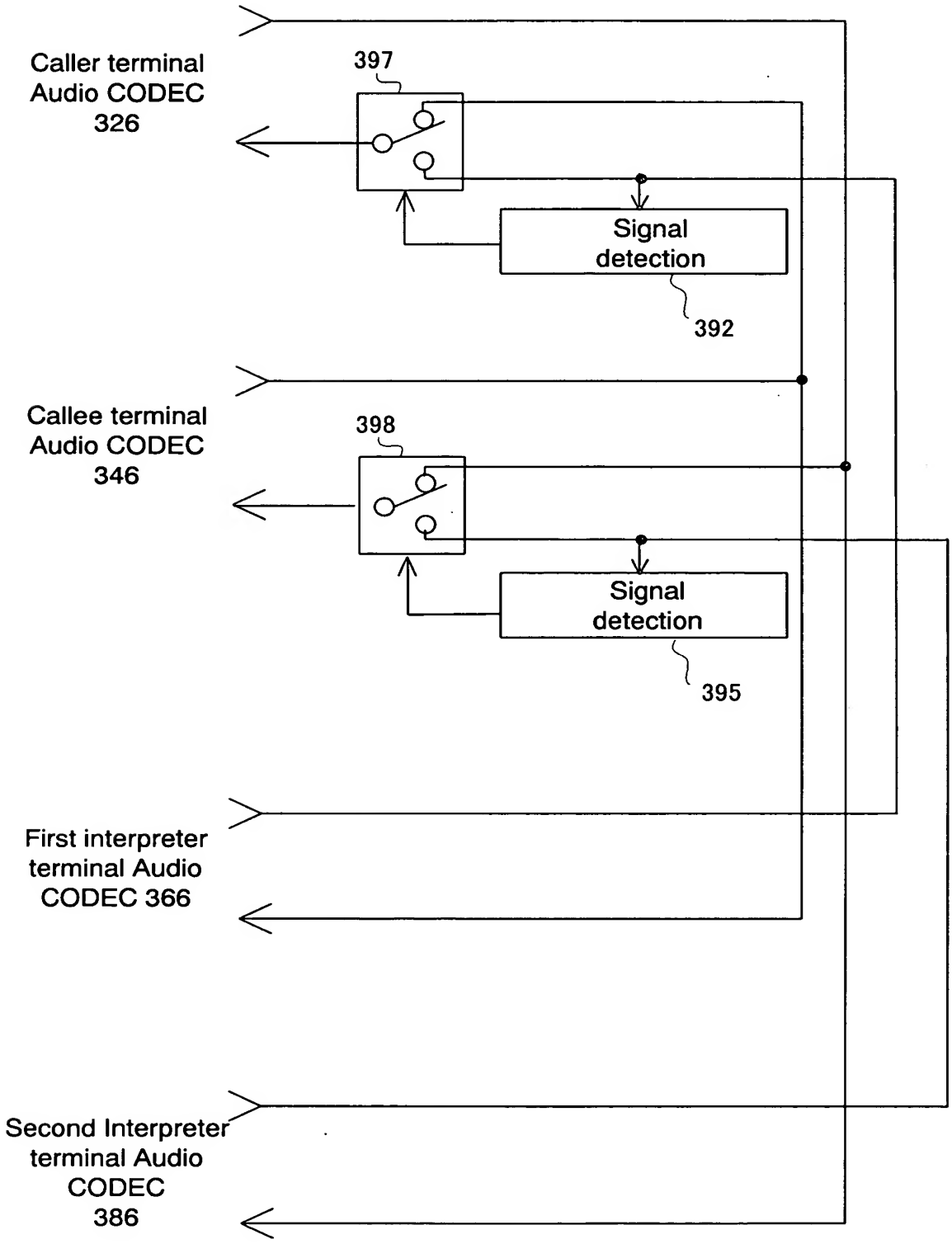

Caller terminal Audio CODEC 326
397
Signal detection
392
Callee terminal Audio CODEC 346
398
Signal detection
395
First interpreter terminal Audio CODEC 366
Second Interpreter terminal Audio CODEC 386

Fig.19

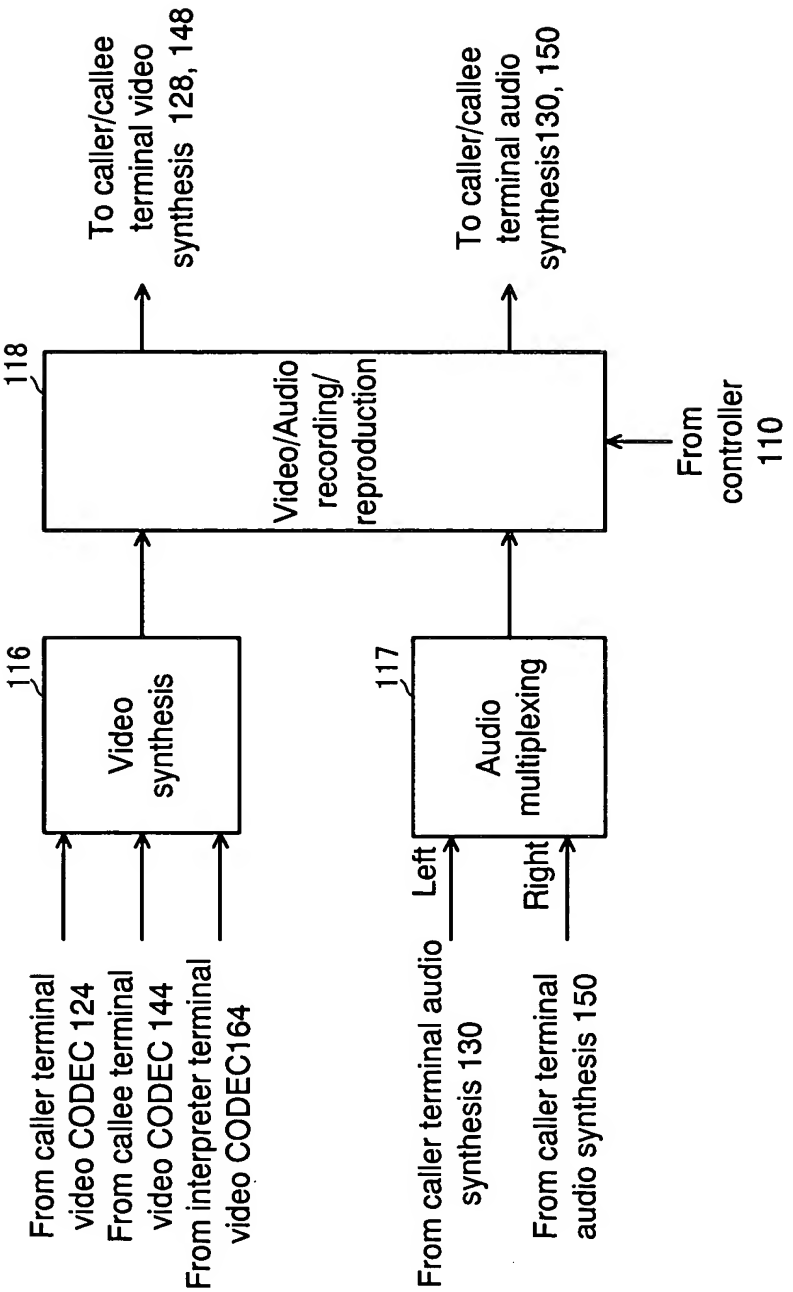

To caller/callee terminal video synthesis 128, 148
To caller/callee terminal audio synthesis130, 150
118
Video/Audio recording/ reproduction
From controller 110
116
Video synthesis
117
Audio multiplexing
From caller terminal video CODEC 124
From callee terminal video CODEC 144
From interpreter terminal video CODEC164
From caller terminal audio synthesis 130
Left
Right
From caller terminal audio synthesis 150

Fig.20

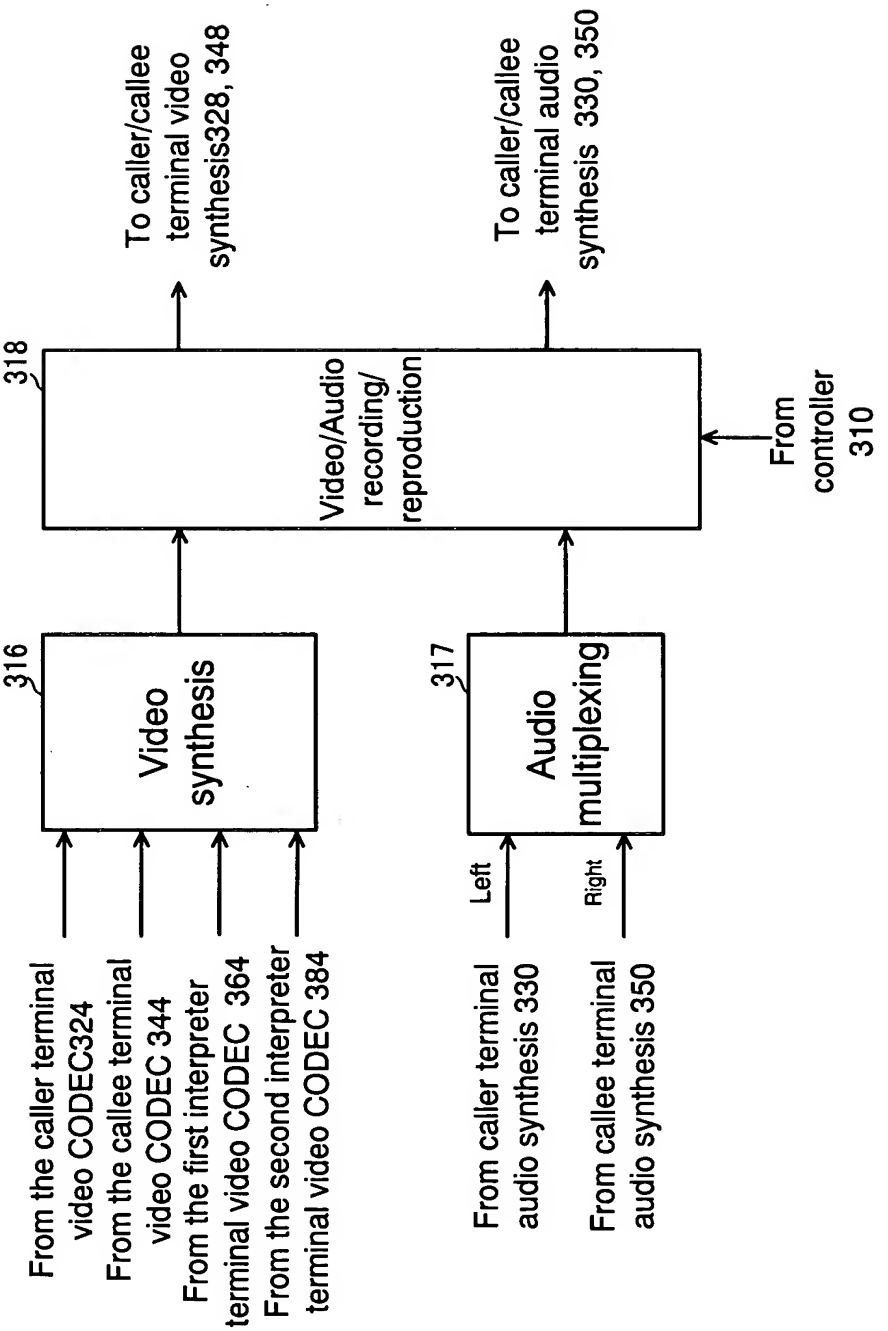

To caller/callee terminal video synthesis328, 348
To caller/callee terminal audio synthesis 330, 350
318
Video/Audio recording/ reproduction
From controller 310
316
Video synthesis
317
Audio multiplexing
From the caller terminal video CODEC324
From the callee terminal video CODEC 344
From the first interpreter terminal video CODEC 364
From the second interpreter terminal video CODEC 384
Left
Right
From caller terminal audio synthesis 330
From callee terminal audio synthesis 350

Fig.21(a)

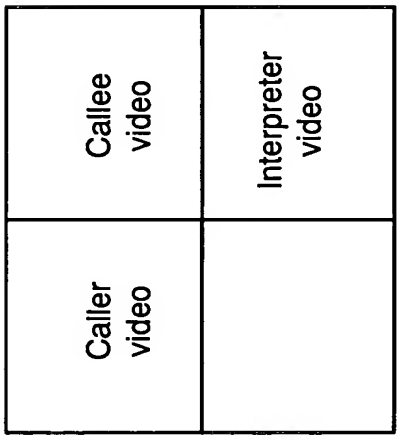


Fig.21(b)

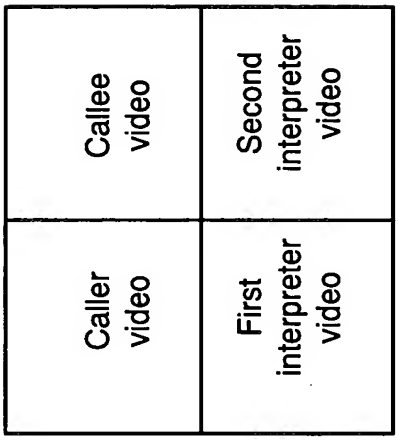
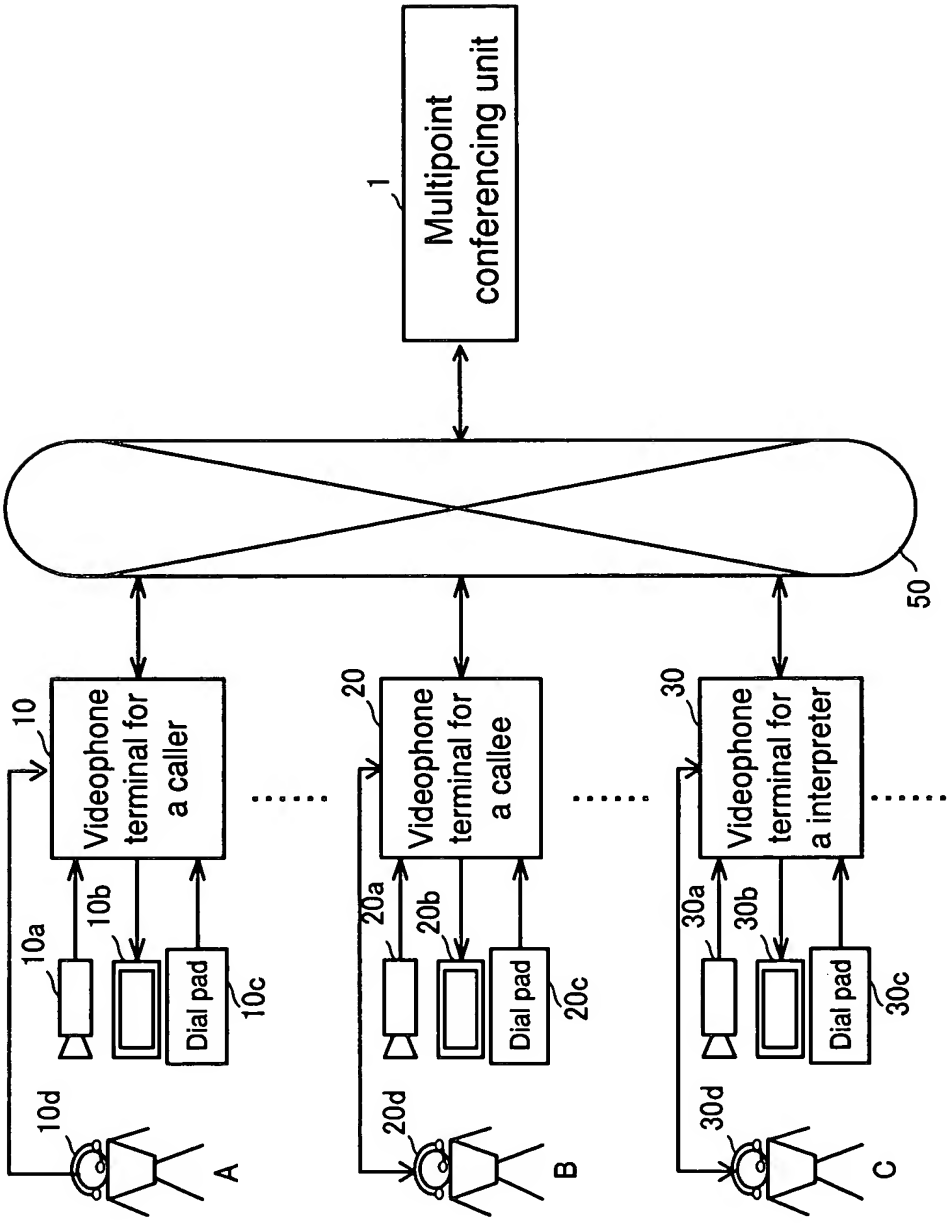


Fig.22

PRIOR ART